Hyperbaric Oxygen: A New Hope For Parkinson's Transcript

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Introduction to Hyperbaric Oxygen

Welcome to the Parkinson's Solutions Summit. I'm your host, Dr. Ken Sharlin And today, I have a very special guest, Dr. Alexander Borsand. And he is coming to us from the greater Phoenix area specifically and Scottsdale today.

I understand you also have a location in the, Glendale area, is that correct? Yeah. All right. Excellent. And this is a topic that I know you guys are going to be extremely interested in, because I'm asked about it all the time, and that is hyperbaric oxygen and hyperbaric oxygen treatment.

So welcome, Dr. Borsand I'm real I'm going to learn today because this is this is one of my this is my Achilles heel. I could ask, but I have no direct personal experience in hyperbaric oxygen therapy.

So let's just dive into it. And, you know. Absolutely. And dive in is the right word. We talked about hyperbaric just like scuba diving. And you know, Doctor Sharon, I'm really appreciative to have you paid to to be on this podcast webinar.

It's just I love to share information. I love what you've been doing. So I really appreciate the offer to be here today. So let's talk about hyperbaric because a lot of people have a little bit of a misunderstanding, and they assume that what we do is just all about oxygen.

And I can just go get an oxygen cylinder and take it home. Why wouldn't I get the same results? And the reality is that it's all about pressure. so right now, you and I, we're standing here.

One atmosphere doesn't matter that you're in Missouri and I'm in Arizona. Anywhere in our entire planet, we're breathing 20% oxygen. And when we go inside that chamber, yeah, we go up to 100% oxygen.

And, you know, it's a large increase. But when we add pressure, we're able to increase our tissue oxygenation and by extension, our plasma, saturation by 1,200%. Oh, that is yeah.

It's, it is. Absolutely. So why is that so important? Well, we know oxygen is the most important nutrient. Yeah. We talk about stats and we talk about protein and that sugar is what to avoid.

But yeah we don't always think about nature oxygen because well we always get it. But we don't recognize who is not getting it. Know like our diabetic patients that have damaged their blood vessels.

Why do they have a wound. There's not enough oxygen. Get into the tissue. It's our most important nutrient and allows us to recruit other growth factors and specifically stem cells.

How Hyperbaric Therapy Works

There's a research, publication just here, back in 2023 that showed a 50% increase in circulating stem cells in a single treatment and over a series of 20 treatments, an 800% increase in circulating stem cells.

And that's just the start of it really. Now, I know we're going to be talking about Parkinson's. so maybe this is a segue. I'm just curious, are those stem cells also identified in the brain when we do this?

Is it all over the body? It's that's a great question. So these are CD 34 positive mesenchymal stem cells. And they do go throughout the vast majority of the body however in the brain much less you know, the blood brain barrier is there to keep things out and circulating stem cells from the bone don't have that same ability.

And you'll see this even when people get stem cell therapy, you have to add something else to get our body to wow those stem cells to cross the barrier.

Sometimes using sugar to do that. And our our patients in Parkinson's are acutely aware of this because they're taking a medication or many we're taking it or can be taking medication carbon Dopa level Dopa, which specifically has been created to allow it to cross the blood brain barrier.

If we just gave you a synthetic dopamine, if it existed, if we just gave it to you, it wouldn't go there. So it has to have that ability to cross. So no, the stem cells play a much smaller role.

What we actually see. And and this gets a little deep into it, but we'll, we'll, we'll bring ourselves back. But this we actually see improving Parkinson's disease through mitochondrial biogenesis.

And that's via the Sirt1 pathway. It's a deep pathway that's meant for PhDs, not MDS like us. So we can get into that. But there's so much more to talk about before we get to that part.

Yes. And feel free to direct this a little bit because again, this is a topic that is, you know, fairly naive for me, but really what is a hyperbaric oxygen chamber?

Because I go to meetings and I see people selling these blow up what we call soft chambers. And the little that I do know is I'm kind of skeptical that that's the type of chamber that I should be using if I do want to use therapeutic, hyperbaric oxygen.

Absolutely. I think you're great to be skeptical of that, as most people should be. So the inflatable chambers can be FDA approved, hyperbaric chambers approved as altitude bags.

And they're only approval is for using them for, altitude mountain sickness. Now, in medicine, we use medications and devices off label all the time. And it doesn't mean there's not a benefit for other indications.

However, the research on mild hyperbaric these bag chambers, it's relatively light now. I love new research. And new research is showing a benefit, but not the same benefits that we get out of hard shell hyperbaric chambers in our facilities.

We only use FDA approved chambers that can go up to three atmospheres. That's triple the atmospheric pressure we're at now. And so even if you're if I just took somebody to two atmospheres, that actually is eight times the pressure of a blood pressure cuff on your arm at its maximum.

So when you take somebody's blood pressure works or something that's a little tight. We're going to eight times that pressure regularly every day. The mild chambers they only go to 1.3 atmospheres.

It's like going about ten feet under water. We know there is a benefit, but we just don't have enough research on it yet. So I usually do not advocate using those until there is more research.

I think that more research will show there is a benefit, and we will see people using them, but probably not clinically. You know, in the office you come to us, we do the, you know, super saturation and then somebody can't get to the office regularly, might have a chamber at home to fill in those blanks.

You know, the days they couldn't get in. Well, prep me as if I'm your patient because I've never been in an oxygen. yeah. Hyperbaric chamber. what's going to happen?

What would my experience do? I mean, I don't, you know, I know what a blood pressure cuff feels like. And, you know, I don't think I want somebody to, you know, put it, eight times the pressure of the cuff or whatever.

And that would kind of hurt, you know. Yeah. And and so you're you're absolutely right in thinking that. So the good news is liquids don't compress and we're 70% water.

So the only place you're going to feel that pressure is anywhere you have air in your body. Think of your middle ear or your sinuses and your lungs. Now your lungs love pressure.

And they do a much better job at pressure. As we lower pressure, they're expanding on their own, kind of like a scuba diver coming up real fast. So we have to make sure we're very safe with what we do.

Every tech that's that's treating somebody in a chamber needs to be through accredited training, has 100 hours plus hands on before treating somebody.

But for my patients, somebody come and sitting down in my office and we start to talk about hyperbaric. The very first words they hear from me is that hyperbaric oxygen therapy is not a cure.

I think it's important people understand this. It gives your body a foundation for healing. We upregulate your mitochondria and everybody knows this. The mitochondria is the powerhouse of the cell and it makes cellular energy ATP. Most people don't realize that it makes it from oxygen, to the final step, the final electron acceptor.

And if we don't have oxygen, we don't make cellular energy. So what is so your energy do or it's not a cup of coffee. You don't get out beyond energized like that.

Chamber Types and Treatment Experience

What it does do is it allows your cell to do its job. So what's the cell's job? Well, first it's ion exchange kicked the sodium out of the cell and bringing potassium in so it can send signals to other cells and do its job in that regard.

But its other job is to get out of the way so a younger cell can take over. When we upregulate mitochondria, it helps that cell turnover. It allows the cell to reenter the cell cycle.

And if we're looking at cellular senescence or cells that are sleeping, for lack of a better term, those cells reenter the cycle, get upregulated and get out of the way.

And a new cell, when it takes over the mitochondria is already upregulated. We've created genomic change. We've changed your DNA expression. And when we stop treatment, we never have to come back in for treatment again.

We do not require maintenance. I know there's a terrible business model, but it's great for our patients once we've gotten to the point that we've upgraded those cells, we don't require maintenance.

There are very few diagnoses that do require some maintenance, and these tend to be more autoimmune disease. And then Alzheimer's, and vascular dementia tend to require however, that maintenance is every 6 to 9 months.

So that's a little bit of what we can do. Let's talk a little bit about what happens when you get into a chamber. When you get into a chamber, we're using a 100% oxygen, which is a drug.

I already told you, it's the most important nutrient. Our government will have said 100% oxygen as a drug. So it does require a prescription. And so when you go to a center, if they're not a prescription, they're not using medical oxygen.

So keep in mind when we're treating so 100% oxygen is delivered either through a nasal cannula. Probably not the best option a non rebreather mask with the bag.

It can be a hood that goes all the way over your head. It's a little tight around the neck. Nobody likes that one. there's a bib system. It's a hard mask that creates a seal.

not as comfortable as well. and then most of our patients enjoy using a mask that most resembles a CPAp mask because a CPAp mask is meant to use for extended hours.

It's very soft, you know, but it creates a seal. it's one of the ones I recommend the most. However, there's nobody doing research to show that the nasal cannula is not as effective as a tight seal or even a hood.

You know, by increasing oxygen to tissue, we start to see a cascade of effects. The first effect is anytime you have oxygen inside or outside of a chamber, you have vasoconstriction.

So if I have a patient who has swelling or inflammation and it causes a constriction and decreased swelling, and anybody who comes to us post-surgery or even after maybe a sports injury, they see a change in swelling and their very first treatment.

So that's amazing to see that. So that's our first effect. The anti-inflammatory effects are all about the interleukins. And we're able to down regulate IO1 beta IO2 il6.

That is pain and inflammation in a nutshell. We also are able to inhibit the Cox two enzyme, which is the same target for every non-steroidal anti-inflammatory ibuprofen, naproxen Aleve.

So there is absolutely an analgesic, a pain reducer effect inside the chamber for almost every patient. So we've decreased inflammation with decreased pain, decreased swelling.

The next steps that we look at are those stem cell release. And that's from bone. We make your bone upregulate its ability to release cells that are stem cells.

Like I said CD3. And for positive the stem cells you really want for inflammatory conditions. It's great for somebody who has, you know, a knee injury, a shoulder or otherwise soft tissue injuries, fantastic results.

Some of the other tissues, you know, stem cell research in its infancy in the US, specifically. but there's a great effect there. I'm speaking at, the Cell Surgical Network stem cell conference coming up here in two weeks in Las Vegas.

And it's all about stem cells and hyperbaric. I'll share a link to that. So people that see this, video at a later date can see the actual presentation if they'd like to.

Oh that's great. Thank you so much. So I'm getting in this chamber and you're still going to this chamber provides a certain amount of the atmospheric pressure, but I still have to deliver the oxygen itself.

It's not just the air in the chamber itself. It's, and in addition. Yeah. So that's actually the most common approach is now to use a mask or some other way to inhale the oxygen.

Because we don't absorb oxygen through our skin, we really only absorb it through two places, our respiratory tract and our lens on our eye. So if you go into a chamber that's filled with 100% oxygen, there's not really an added benefit.

They're becoming less common. Hospitals still may use them. However, hospitals tend to use bigger chambers that fit more than one person. You know, it just makes sense for a hospital, and those are never filled with 100% oxygen.

They can't be. The risk is too high if you're using 100% oxygen. We're worried about a fire. And so I want to make sure that we're using 100% to breathe.

But inside the chamber, we never get above 23.5% oxygen, because above that number, a static electricity spark could cause a fire. And we want to do everything we can to protect our patients.

Our patients are using grounding straps or grounding pads. The entire chamber's grounded. We're following all the same regulations as the hospital to ensure safety.

And I got to tell you, there's very few hyperbaric incidents that have happened. But when they do happen, they're catastrophic. So we do everything. What I what I tell everybody in our training courses is, you know, we drive a speed limit and most people don't, and most people are going to get away just fine.

And we don't see these incident rates or things are happening all the time because people aren't driving the speed limit. But we're a training facility.

I've got med students and residents in our facility. They need to learn what the regulations are and anybody goes through our training. I think I try to put a little bit of fear in them in that regard.

For my patients, it's the other way around, right? I want you to understand that it's a relaxing experience. You get into the chamber, you lay down as it starts to compress, it starts to get a little warm, and that's just molecules coming together in enclosed space.

Friction creates heat at the end. When we lower the pressure of molecules or far apart, it gets a little cold. However, once you're at pressure, you're going to feel like you feel sitting right here, right now.

There's no pressure feeling on our body at that point. Most of our patients do tell us that they feel that they are functioning at a higher level inside the chamber.

Most people like to read or even do some work in there. As long as it's not electron ICS, no electronics in chambers whatsoever. The risk is just a. Actually, I say the risk is too high.

I'd say the regulations say no electronics. Whether the risk is too high or not. I'm wondering if we could just for a split second rewind on something that really caught my attention.

I think it's super important to the viewers. you mentioned about certifications, you know, maybe licensing, that kind of thing because there, quite frankly, are hyperbaric centers around the country.

Safety, Training, and Facility Standards

And you implied I would tend to agree that not all of them are necessarily staffed and or directed by people of had specific training, have taken the test, have the certificate, etc..

So could you be real specific about what folks need to be looking for? Yeah, absolutely. So, I work at certified clinics. Clinics have either been accredited or have staff members have gone through the training as the most important aspect of your treatment.

And it's not just protecting our industry or our industry is important. Of course. It's protecting your patient. So as a patient, when you walk into a center, the first ask is who's your medical director?

Yeah, I want to make sure there's a doctor prescribing oxygen and centers that don't have a medical director or already not, following the speed limit.

The next step is, well, what training has your staff had now? You and I, as physicians, we actually don't require additional training to provide hyperbaric oxygen therapy.

I think it's a great idea to have it, but technicians do require more training. So there's a few different boards. The International Board of Undersea medicine provides training and you can see it. There's online training.

There's hybrid training. There's hands on training. We only provide hands on in our facilities because, I want to teach you how to do an emergency procedure.

I need to make sure before I sign off on your certificate that you know what you're doing. We require 100 hours of hands on before anybody is treating patients.

The training course is 40 hours. And that 40 hours is split between class time and and hands on training. That's through the International Board of Undersea medicine.

There's also the Undersea and Hyperbaric Medical Society. It's been around for 60 plus years. They do a fantastic job. Their credit facilities, their accreditation is usually limited to wound care centers.

And and less often. Do you see it for outpatient on and off label centers? They're doing a little bit more in that regard. I am a member of both, boards, but I'm a certified trainer for the International Board of Undersea medicine.

But if you want to know for sure if you're going to a safe facility, the best thing you can do is reach out to association, the International Hyperbaric Association.

I h a you reach out to them, they'll tell you right away this facility does or does, and they'll find a way for you to find a center. They provided great amps for people.

I was at meeting. They provided a free chamber to a gentleman. There were $150,000 device because they recognized the need for it. I love being associated with this group.

I'm sure you guys can provide the contact information at the end. We're talking about that. I am on faculty for them. I do teach their, auto immune track.

And I love what we do at the, at those at the, sorry, at the, at our meetings because it's just, it's learning from other people and, and the new changes and the new research.

So I think from a patient perspective, reaching out to one of these accrediting facilities. And just as long as they have an MD, a D. O., depending on the state, may be a natural pathogen.

NP as their medical director. Yeah, we expect they're probably following the rest of those regulations. I don't know anybody with a license who would risk their center by not doing that.

The other one question you could ask is if are your chambers FDA approved? And, you know, we could get this conversation about the FDA and pluses and minuses, regardless of that conversation, what FDA approval means in this situation is it means tested.

And as long as somebody is testing it, that that's all I care about. I don't want to see somebody get into a chamber and have an adverse event when we're trying to protect our health.

This is all about creating this foundation of healing. So everything else that we're doing can help, because everything else you're gonna be talking about, this summit is all the other pieces of the puzzle.

I think hyperbaric is a great piece of the puzzle. However, it's not going to be the only thing our patients with Parkinson's are doing. I'm sure you have somebody me focusing heavily on glutathione.

I'm sure you have people that are talking about, you know, methylene blue and some of these other aspects that, our patients respond so well to. Hyperbaric gives you a foundation.

So all of these other aspects can work better. And when we stop with hyperbaric, we're going to keep integrating those other aspects. And hopefully, you know, able to maintain health.

I don't want anybody hearing from me that they think that getting into a chamber uses some good Ativan, and we're going to reverse their diagnosis. Sure, sure. It's very important that people understand.

Well, and you brought up a point about, the FDA and we use some medical devices in our clinic, and we're aware of FDA clearance letters and things like that.

So folks understand that these these sorts of clearances have to do with the safety and that they can be considered medical devices. and then there's the distinction between something that's considered medically safe and appropriate to use versus sort of a FDA approved treatment.

Like, we can't technically say that hyperbaric oxygen is an FDA approved treatment for Parkinson's, but you have observed and have some good scientific knowledge about how this can specifically help people with Parkinson's, like increasing dopamine levels, for example. Yes.

Yeah. And so, I mean, you know, increasing dopamine levels is interesting because remember our our testing is limited. Yeah. When we're testing for dopamine, we're not really testing for domain.

We're testing for metabolites. And yeah there's a lot on that research that will continue to be better understood to to go back to FDA, aspect of the conversation.

Well, you're talking about there is the practice of medicine because the practice medicine says, all right, this device or even this medication is approved for this.

However, with our understanding of biochemistry, physiology, you say, well, if these are the mechanisms, it stands to reason it could help here. Well, let's see if they published studies on that.

And sure enough, people have. And now there's it's reasonable to use this as a treatment usually as adjunct therapy. you gotta remember some of these most popular drugs on the market, for a number of different treatments were never developed for a, you know, let's talk about Viagra was developed for pulmonary hypertension, a very serious disease.

However, it's not used for that by 90% of people with prescription. Right. That's not a concern because the practice medicine says I understand that it's a vasodilator and it's going to help patients with other aspects that need more blood flow.

So as we start talking about Parkinson's and hyperbaric, we go back to our different mechanisms. And I said this early on that it's all about the mitochondria and it's about this mitochondria biogenesis versus via the Sirt one.

And you know this pathway is a complex pathway I'm happy to share publications on. So people can get a better understanding. Like I said, this is PhD level.

You and I, we read these are like let me get to the impression so I can get a better understanding what that means. you know, people have spend their life on these one pathway.

But so in this specific study and this is an animal study, we'll talk about human studies. But these were mice that are exposed to hyperbaric oxygen therapy at very high pressure two and a half atmospheres, absolute 100% oxygen for seven consecutive days.

Hyperbaric Therapy for Parkinson's

And this study showed that it significantly increased the number of positive neurons, enhanced neurotrophic neurotrophic factor, you know, BDF brain drive naturalistic factor decreased the AP apoptotic signaling and attenuated inflammation.

in these, neural pathways and in the midbrain specifically. Then they did the other part of the testing, not just looking at all of the the different, you know, pathways and the different markers, but looking at what really happens for the patient here.

They looked at locomotor activity and grip strength. And these effects were shown to improve after this series of seven treatments. Now we see in another study that hyperbaric oxygen actually inhibits the decrease of the dopamine dopaminergic.

Sorry, some of these words I'll never, never get, neurons in the substantia nigra, of mice that were induced with Parkinson's. So it's great were inhibiting this decrease.

Did we give you a word of me? No. We stopped your body from decreasing. And so as a treatment for Parkinson's, we've seen that significant changes in gait.

We've seen significant changes in depression and anxiety associated with hyper BR or with Parkinson's, which is a major concern for our patients. and then even that that Kilroy tremor we have seen a change.

tremor does not go away completely with hyperbaric and even with the vast majority of other treatments that we see, that tends to be something that sticks with a lot of our patients.

However, if they have less depression, more motor activity, and can walk normally, I can see it on their face. I can see on their face. Right. And the 20 treatments in, I'm looking at my patient.

I'm like, you look better. Like I'm feeling better. I'm like, you don't have the mask that we talked about. So you're curious if you're doing any before or after, like we'll take a picture of you before. Take a picture. Afterwards.

I honestly don't, and it's a really good idea that we should, you know, since our center provides hyperbaric and hyperbaric told me we're a 90%, referral based practice, and the people that are referring to us are doing all of that quantifiable data.

You know, they're the ones who do the testing, the labs and otherwise. Some of my patients may not have somebody do lab work now do some of that. But I doing the photos before and after.

What an easy study to set up. So I to reach out to my med students say hey, who wants to write this one? So yeah, with some definitely to look into. You know, I know I'm just sort of fantasizing a little bit, but there is all that like facial recognition software that does metrics, right?

It's all digital, digitalized. And I'm not suggesting in any way that people's privacy, of course, get violated or anything. But, to go beyond the subjective of their face looks so much better there.

But really, we do have that a lot in neurology. You know, I always say I kind of know the diagnosis the minute I walk into the exam room and then people go, well, I do examine my patients, but I've had folks say, oh, well, that doctor just looked at me and told me I had Parkinson's.

but it would be interesting to have some, you know, quantified metrics if you were to even consider publishing and say, you know, this metric, this metric, you know, actually changes.

So I'm taking notes. I think it's a great idea. You and I talked briefly about AI earlier. And and there's always a concern for our patients, you know, health care data.

And as we talk about these type of things, especially photos, photos of a patient. So there's a lot to consider in that regard. But there's so much it can be done by taking the human factor out and allowing, you know, any kind of other metrics that can measure.

Because we talked about the best studies or whatnot, randomized, controlled, double blinded studies. You don't know, I don't know. The patient doesn't know.

This is how we get the best understanding and crossover control studies. We can very hard and do with hyperbaric, though, because you and I were talking earlier about pressure in the chamber.

As soon as I close the door in the chamber, you feel that pressure in your middle ear, just like you're driving up to the top of the mountains. You're flying an airplane. How do I create, crossover study, placebo, where somebody doesn't feel the pressure.

It leads to some of the studies being published that show there's no benefit over the sham, because a sham to come up to a pressure just not the same pressure.

Like it's a hard study. but as we get a little bit more into how can a hyperbaric oxygen therapy help our Parkinson's patients, you know, it depends on every patient.

And like you said, you know, when you walk in the room, diagnosis, to some degree, it's the reason that I walk my patients from the waiting room to my office every time my steps.

I can bring them and know I need to see gait. I need to see them get out of that chair. I need to have some of that information. Because by the time we get to my office, more often than not, I've got some good differentials and hyperbaric.

We see a lot, a lot of different diagnoses walking in the door. So it's one thing I love about our field. Yeah. When I used to work in Men's Health and doing some of that part, it's the same thing all day, every day.

And here I get to help people across the spectrum. And hyperbaric has a benefit for so many diagnoses. It's not curative, but there's a benefit. And I can't think of a single diagnosis in all of in all of medicine that doesn't have an inflammatory aspect.

If I can decrease inflammation I'm helping me out. You know. Yeah. No I absolutely. And you were talking about you know of course noticeable changes in gait or facial expression.

But you've also touched on some areas that you know, don't get talked about enough when it comes to Parkinson's mood, anxiety, depression, pain and Parkinson's is a very big deal.

And then one that you hadn't mentioned. But, you know, I know that everyone watching is familiar with Parkinson's is going to go, yes. And that is how about the impact on fatigue?

Oh, yes. Oh, absolutely. So I mentioned earlier that we upregulate your mitochondria and that's more cellular energy. But it's not a cup of coffee energy.

And that's absolutely correct. However oxygen itself having more of that in our tissue and in our plasma, I means that our body's not going to our hemoglobin, our red blood cells to pull that oxygen off.

And who has fatigue more than anybody else who walks in my door that I know right away as waking up tired with a headache, or my patients with sleep apnea.

They're oxygenating all night long by giving them a boost of oxygen. They feel better. Every patient that comes out after a short series of treatments will tell me more felt energy. Now.

Treatment one. Treatment two. It might be the opposite. There might be a little bit of increased fatigue, and that's simply from the oxidative stress of hyperbaric.

And everybody is listening right now. So I'm thinking, well, oxidative stress isn't good for me at ages. Me and they're not warm. But what happens is as we increase reactive oxygen species oxidative stress, we increase free radical scavengers even more.

And that's usually by about our third treatment. And that's where that light switch happens. The only patients that that's different for my professional athletes, they get out and first treatment.

They're just blown away. They have so much energy. And why is it they have more mitochondrial density than you and I? Yeah. Their muscles every single cell has more mitochondria.

It's like taking your car and putting more engines in it. And now that you have more engines, you're going to be able

to do more. They recognize that right away.

And I mean, they're also eating clean. They're doing all the things that we want our patients and or ourselves, what we strive to do. And we also recognize it's not easy to do, so with our patients with Parkinson's, and this is something anecdotally, our center.

Absolutely, absolutely. See a dramatic shift in felt energy, less fatigue, less depression, which is probably a big portion of the fatigue. You know, depression is that great mass greater every symptom.

But it could be for depression. So I want to make sure. So, as we talked about that, you know, the the animal studies, I didn't get a chance to get into human studies.

And that's what's really important, because now that we have a new way of looking at the brain, talking about Spect imaging. Yeah. The Aymond clinics doctor Daniel Ehrman has pioneered this field.

this is single photon emission computed tomography, and it looks at metabolism in the brain. And so when we looked at Spect scans, we were able to look at Spect scales before and after hyperbaric.

And uptake was just changed dramatically in this area. It was when we saw that the battalion was more effective in the caudate. And we saw that prior to the hyperbaric, we saw decreased metabolism in these areas.

And after hyperbaric showed an increased metabolism and increased blood flow, that alone should lead us to using hyperbaric and doing a significant amount more research.

Treatment Course, Contraindications, and Cost

Because if we can allow the midbrain to do any more ability to have that substantia nigra, do any more of creation of, dopamine. And it's the regulation, of its production through metabolism that is should be a focus of treatment.

Absolutely. Now you mentioned that with the Parkinson's folks they would do a course of treatment and then they're good. They don't have to do so. So yeah.

So hyperbaric oxygen therapy should not require maintenance once we've upregulated a cell and the mitochondria upregulated. And that genomic changes happened.

We should not require maintenance. However our autoimmune disease usually does require that our patients with Parkinson's usually I do see them back somewhere at 6 to 9 months.

And the most common thing that they tell me is I just felt better when I was in the chamber. I'm like, well, give me some more. Give me some understanding of what you mean by that.

And there hasn't been a quantifiable it was I'm sleeping better. Who is this? It's typically I was feeling better I a great but so you do it for a short series.

It's two five treatments and you see how you feel. And then I usually don't see them again for another 6 to 9 months or the other end of the spectrum of I understand I don't need this, however, I like it.

I want to keep coming back. And if I had any downside that. Oxidative stress is something that we always want to take a break from at some point. This is the concept of, for me, cysts in our body.

Any stress that we do can be good for our body, to a point that our body starts to be used to that stress. This is interesting. This is doing the same exercise every day.

This is eating the exact same diet every day. Our body needs variation to get the same result. So after 40 treatments, we always ask our patients to take a break.

Our patients should take somewhere between ten days and 30 days off. And I have patients here in our facilities that we used to call it the Century Club.

They did 100 treatments, and now we've got patients that have done five and 600 treatments. Wow. Did we need 5 or 600 treatments? No. Do they like how it makes them feel? Yes.

And just as long as there's not a concern for pulmonary function, other aspects we watch those. You know, the aspects that could deteriorate. We watch eyes.

You know, we have no concern, but our eyes do change with oxidative stress. That's cataracts. Hyperbaric chamber caused a cataract. Not a single time has that been published.

But it can mature cataracts okay. So we're going to give people very specific advice as we kind of round out our interview. Number one are they're contraindications.

Are there reasons that specific people with, you know, different types of health issues perhaps should not be in the hyperbaric chamber? absolutely. There's very few absolute contraindications.

They tend to be active use of chemotherapeutic. if somebody has a pneumothorax or collapse one, I can't put them in a chamber. They have a history. I can pregnancy is an absolute contraindication.

And there's a few other medications that pop up. So in make sure when we're talking about going to see somebody, you're going to see I'm talking with a doctor about it.

If you go to a center that doesn't have a doctor, they're going to miss these things because they just don't know what platen is or doxorubicin, like, okay, you had that medication, you're not taking it anymore.

You're fine and realize that it affected the lungs. So contraindications. There are some however for average absolute contraindication there's a time and place.

So as your doctor in the practice of medicine will definitely help guide that. The best. We're talking about 40 treatments right. Correct. Approximately five days a week.

So it's about eight weeks of treatment or when we're looking at. Publications will tell you seven days a week and you're going to see most commonly, you're going to hear from your provider five days a week.

A provider might not be open seven days a week. It's as frequent as possible. It's like I give you an antibiotic. Take it every day until it's done. Do your hyperbaric every day until you're done.

Okay. And we touched on oxidative stress. And the folks watching this probably know or have heard of that word antioxidants. vitamin C, alpha lipoic acid, glutathione.

Should I, should I load up on my antioxidants before I go in? No, you don't want it. You don't want to create too many variables. Take what you're already taking.

If you're increasing something, make sure your providers aware of it. Glutathione is something that's going to play a huge role. Vitamin C to a lesser degree.

But no, taking more antioxidants won't help you through it. The reactive oxygen species are signal molecules. They help your body recruit things like platelet drives growth factors.

So we want some oxidative stress. We do. So it's important that we are seeing our provider to make sure they understand what we should take, what we shouldn't take.

But I would not load up on it by any means. Could actually potentially work against you in this context. Yeah,

absolutely. Yeah. Okay. Very very cool.

It can I ask is it expensive. Is it covered by insurance. So insurance will cover 15 approved on label indications. unfortunately Parkinson's is not one of those approved indications.

However, we have patients that submit to their insurance regularly and do get some level of reimbursement. as far as expensive. You know, it really depends on where you're at.

Here in Arizona, we see a range of about, you know, about $180 a treatment all the way up to about 250 a treatment. But when you purchase a package of treatments, obviously there's discounts that goes down quite a bit.

So it's hard to say the word expensive versus cost benefit analysis really. So here in our center, our patients I think are very happy with the cost. but there's grants out there.

There's associations. Reach out if you cannot find those will provide those resources. Excellent. And your center is also to. Get prescription oxygen.

RX O2, you can find us at rx-o2.com. Remember that's an O is an oxygen not a zero. And I always like to direct people to the associations more than to us.

You can always reach out to me, but the International Hyperbaric Association is your best resource. Shannon, who started this over 20 years ago, has a wealth of knowledge and I just love to lean on her for, hey, has anybody done this?

And she's like, let me put you in touch with that provider. He's doing a study right now. So usa.com is your best resource. And they do have annual conferences.

I know you're going to be a speaker this coming October. that will be after or before rather the Parkinson's summit airs. But this is an annual conference.

The International Hyperbaric Association, their annual conference. And then there is the international Board of Undersea medicine conference. And that's going to be in January 2025.

Correct? Yes. So that's the that's the International Board of Undersea medicine training. The training is a little bit different. A conference is 40 hours typically meant for clinicians.

However, I have four people who show up and say, I just want to learn and people that show up and just want to learn. We don't charge them all the fees we charge doctors.

Yeah, they're not sit. They're having to get the CME credits and and take an exam. So we have a lot of people to come and sit through that. We throw it up on line.

So if anybody wants to see just that part. So reach out to myself. obviously you can provide all that contact information. We'll get you all those resources.

And I'm not the only person who teaches that. There's a number of other people who do teach for that course, and they're fantastic. So I would definitely look into that.

Now, Dr. Alexander Borsand and if someone wants to find you your clinic, feel free to give us a phone number, a web address. How are they going to do that?

Absolutely. So I would recommend reaching out to the website first rx-o2.com but if you want to give us a call you're in clinic (480) 270-6090. We're always available to discuss.

And if you need help finding a center in your state or even outside the United States, we've been helping people

find centers. So just reach out. We're happy to help.

Wow. Excellent. It's been an excellent and very, very informative interview. Dr. Alexander Borsand a world authority on hyperbaric medicine. And, we've learned so much.

Thank you again, and I hope to see you next year at the Parkinson's Solutions Summit. And so thank you so much for the opportunity. I can't wait to learn more throughout the rest of this summit.